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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/052,779	01/23/2002	Atsushi Kawasumi	005405.00004	7218

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EXAMINER

CUNNINGHAM, TERRY D

ART UNIT	PAPER NUMBER
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2816

DATE MAILED: 01/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/052,779

Applicant(s)

KAWASUMI, ATSUSHI

Examiner

Terry D. Cunningham

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the corresponding address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 December 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2,9-11,17,19,21 and 22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 9-11 and 17 is/are allowed.
- 6) ☒ Claim(s) 2,19,21 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/449,382.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Drawings

The drawings are objected to because, as understood, the drain of 122 of Fig. 6 should be shown as an output rather than ground. Appropriate correction is required. Note, Applicant may no longer request that any objection to the drawing(s) be held in abeyance. See 37 C.F.R. § 1.85(a).

Examiner has fully considered Applicant's remarks for the above rejection and has not found them to be persuasive. There is support found in the specification for the "drain of transistor 122" being "pulled lower than the transistor's gate".

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 19 and 21 are rejected under 35 U.S.C. § 112, first paragraph, as based on a disclosure which is not enabling. In claim 19, a claimed means or element corresponding to, for example, elements 111 and 115 of Fig. 4 or 7 is deemed critical or essential to the practice of the invention, but is not included in the claim(s). In claim 21, a claimed means or element corresponding to, for example, elements 115, 121 and 122 are deemed critical or essential to the practice of the invention, but are not included in the claim(s). An arrangement lacking these features is not enabled by the disclosure since it cannot be understood from the specification how the circuit will operate without such. *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

To overcome the above rejections, it is suggested that the claims recite a means or element to provide a gate (or gate-source) voltage to the gate of the first “transistor”.

Examiner has fully considered Applicant’s remarks for the above rejection and has not found them to be persuasive. The distinction, provided by Applicant, between “a current mirror circuit” and “a current source circuit” is not seen to be of relevance. Applicant states that the circuits of Figs. 16 and 18, for example, are current sources, whereas the circuits of Figs. 4 and 14, for example, are current mirrors. First, Examiner contends that one skilled in the art would understand the specification to disclose that the circuits of Figs. 16 and 18 are subcircuits that necessarily require the remaining elements of Figs. 4 and 14. Second, the phrase “current circuit” is clearly broad and can include current mirrors. And since claims 19 and 21 recite the “subtractor” circuits, it is clear that the disclosed comprehensive “current mirror” circuits are what is being recited.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 19 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 19, lines 8-15, it is not understood how the circuit can have the recited operation when there has been no recitation of the connections of the subtractors to the gate and drain of the “first transistor”. In lines 13-14, it is not understood how the “first transistor” can have a “drain-source voltage” or a “gate-source voltage” when there has been no element or means recited to control the voltage of the gate.

Claim 21 is rejected for similar reasons as claim 19. Also, for clarity, it is suggested that --, being a difference-- be inserted following “voltage” in lines 22 and 25, and that a comma be inserted following “first PMOS transistor” in lines 23 and 26.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. §102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless —

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2 and 22, are rejected under 35 U.S.C. §102(b) as being anticipated by Guliani (USPN 5,109,187). Guliani discloses, in Fig. 2, a circuit comprising: “a first PMOS transistor (42)”; “a second PMOS transistor (32 or 44)”; and “a compensation circuit (remainder of circuit)” having “at least one compensation PMOS transistor (16)”, all connected and operating similarly as recited by Applicant.

Examiner has fully considered Applicant’s remarks for the above rejection and has not found them to be persuasive. Examiner contends that Applicant has misrepresented the operation of the circuit of Guliani. There is no disclosure whatsoever found in the reference to Guliani for start-up circuit 12, 14 and 16 operating with “digital” behavior”. As clearly seen in Fig. 2, since the voltage on the gates of 12 and 14, V1, maintains a voltage of about 0.9 volts, PMOS transistors 12 (having a gate-source threshold voltage of about 0.0) and 14 (having a gate-source threshold of about 0.7) will always both be on. Thus, transistor 12 and 14 will act as a divider. Further, lines 34-57 of Col. 5 of Guliani expressly state that the “start-up circuit” is “for maintaining the operating point of the circuit 20”. Clearly, the start-up circuit cannot possibly maintain the operating point if it has “digital” operation. Since the start-up circuit provides a

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negative feedback voltage corresponding to the level of V1 and since it maintains the operating point, the circuit of Guliani will inherently provide the operation recited for the "compensation circuit".

Due to the present lack of enablement and indefiniteness in claims 19 and 21, allowable subject matter cannot be determined therein.


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terry Cunningham whose telephone number is 703-308-4872. The examiner can normally be reached on Monday-Thursday from 7:30 to 6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy P. Callahan can be reached on 703-308-4876. The fax phone numbers for Technology Center 2800 are 703-872-9318 for Before Final communications and 703-872-9319 for After Final communications. Please note, any faxed paper clearly stating **DRAFT** or **PROPOSED AMENDMENT** at the top will be forwarded directly to the Examiner. All others will be treated as a formal response and acted upon accordingly.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is 703-308-0956.

TC
January 8, 2003


Terry D. Cunningham
Primary Examiner
Art Unit 2816